**Introduction to Fiber and Textile Analysis**

Fibers are threadlike elements from fabric or other materials such as carpet. Most are easily identifiable under a microscope. Fibers fall into three classifications: natural (animal or plant fibers like wool, cotton or silk), synthetic (completely manmade products including polyester and nylon) and manufactured (containing natural materials that are reorganized to create fibers such as rayon).

Fibers are useful in crime scene investigation because their origins can be identified. A carpet fiber on a person’s shoe can indicate the individual’s presence at a crime scene. However, fibers are very mobile and can become airborne, get brushed off or fall from clothing. This mobility makes timely collection crucial to prevent loss of material or cross-contamination.

Collection: Fibers cling to other fibers and hair, but may be easily brushed off. When approaching a scene, investigators will attempt to pinpoint the most probable locations for deposited fibers. For example, the carpeting under and surrounding a victim’s body, clothing from the victim or a suspected weapon are likely places to find fibers.

Common collection methods include individual fiber collection using tweezers or vacuuming an area and sorting the materials at the laboratory. Trace evidence can also be gathered by tape lifting, however, this is not ideal due to the destructive nature of adhesives.

Samples that potentially contain fibers should be separately bagged to prevent cross-contamination.

Underline the different classifications of fibers

Underline the 3 words that explain how fibers are useful in crime scenes

Box the section that describes by time is of the essence when it comes to collection

Underline the section that describes where fibers are normally deposited.

Underline the different collection methods. (minimum 3 words/maximum 6 words)

Comprehension Questions

1. What are the different classifications of fibers?
2. Why are fibers useful in crime scene investigations?
3. Why is it important to collect fibers as soon as possible?
4. Where are fibers normally deposited?
5. Describe the different collection methods used.

Extension Question

1. During a crime scene investigation, investigators found white fibers around the victim. The victim appeared to have suffered multiple stab wounds to the chest and abdomen area. They conclude the fibers did not belong to the victim, but rather the suspect. Through further investigation, more white fibers were found in the bathroom, but in a higher quantity than those found near the body. The toilet seat was left open and the toilet paper handing on the wall is untouched, though the sink is wet. Investigators also found white fibers in the kitchen (more than in the bathroom) that were covered in some sort of orange powder. Cabinets are left open which broken pickle jars on the ground. As investigators are searching the surrounding area, they find a garbage pail with a top. The top has orange power on it. Upon opening the garbage pail, investigators find a white ski mask covered in orange powder with small drops of blood. A sweatshirt covered in blood was also found. Based on your knowledge of forensics, come up with a possible theory as to what happened in the house of the victim (YOUR CLAIM). What evidence did you pull from the crime scene to state your claim (YOUR EVIDENCE)? How did you make sense of the evidence? What did the evidence tell you? (YOUR REASONING).

|  |  |
| --- | --- |
| Claim: |  |
| Evidence: |  |
| Reasoning |  |